

DIALOG(R)File 352:Derwent WPI

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Prepn. of modified natural rubbers - comprising grafting natural rubbers,  
having proteins removed, with monomers e.g. (meth)acrylates, or  
epoxidation with peracids

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Number of Countries: 001    Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 6329702	A	19941129	JP 93121636	A	19930524	199507 B
JP 3294903	B2	20020624	JP 93121636	A	19930524	200243

Priority Applications (No Type Date): JP 93121636 A 19930524

Patent Details:

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JP 6329702	A	7	C08C-019/00	
JP 3294903	B2	6	C08C-019/00	Previous Publ. patent JP 6329702

Abstract (Basic): JP 6329702 A

Modified natural rubbers are prepd. by grafting with monomers e.g.  
methacrylates, acrylates, acrylonitrile, or epoxidation with peracids,  
of natural rubbers having proteins removed by biodegradation and  
washing with detergents at less than 0.1 wt.% of N content,  
representing no IR absorbence at 3280 cm<sup>-1</sup>.

USE/ADVANTAGE - Used as e.g. adhesives and inner lines of tyres or  
hoses. By removing proteins, natural rubbers are modified efficiently  
and show improved properties, e.g. adhesion by grafting, or oil  
resistance and gas permeability by epoxidation, eliminating allergic  
action of natural rubber.

In an example, a natural rubber latex with 60.2% rubber component  
was treated at 37 deg. C for 24 hr. by a proteolytic enzyme, Alkalase  
2.0M, 1% nonionic detergent soln. was added to adjust concn, to 8%

rubber and centrifuged at 11,000 rpm. for 30 min. By 3 recentrifuge treatments of the creamy prod. suspended in 1% detergent soln. in distilled water, rubber with 0.008% of N content and no absorbence at 3280 cm-1 was obtd. A latex of 60 wt.% of the rubber was grafted by methyl methacrylate using tert. butyl peroxide-tetraethylene pentamine redox system at 30 deg. C for 3 hr. to obtain natural rubber with 33.4 wt.% of grated monomers.

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Title Terms: PREPARATION; MODIFIED; NATURAL; RUBBER; COMPRISE; GRAFT;  
NATURAL; RUBBER; PROTEIN; REMOVE; MONOMER; METHO; EPOXIDATION

Derwent Class: A11; A95; G03

International Patent Class (Main): C08C-019/00

International Patent Class (Additional): C08C-019/06; C08F-008/00;  
C08F-008/08

File Segment: CPI

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A12-T01; G03-B02B; G03-B02D1

Polymer Indexing (PS):

<01>

\*001\* 017; R24073 D01 D02 D03 D12 D10 D51 D53 D59 D85 P0599 H0124 B5061;  
G0340-R G0339 G0260 G0022 D01 D12 D10 D51 D53 D58 D63 F41 G0384-R  
H0146; R00479 G0384 G0339 G0260 G0022 D01 D11 D10 D12 D51 D53 D58  
D63 D85 F41 H0146; R00817 G0475 G0260 G0022 D01 D12 D10 D51 D53 D58  
D83 F12 H0146; H0088 H0011; H0124-R; L9999 L2528 L2506; L9999 L2551  
L2506; S9999 S1025 S1014; P0088

\*002\* 017; ND03; ND07; N9999 N6893 N6655; N9999 N6882 N6655; B9999 B4535;  
B9999 B4251 B4240; K9836 K9790; Q9999 Q6644-R; Q9999 Q7830; Q9999  
Q8731 Q8719; K9574 K9483; K9687 K9676; B9999 B4488 B4466

\*003\* 017; B9999 B5301 B5298 B5276

\*004\* 017; R00899 D01 D11 D10 D50 D88 F48; R00934 D01 D11 D10 D50 D88 F10  
F07; C999 C099 C088 C000; C999 C293

<02>

\*001\* 017; R24073 D01 D02 D03 D12 D10 D51 D53 D59 D85 P0599 H0124 B5061;  
H0124-R; P0464-R D01 D22 D42 F47; M9999 M2175; L9999 L2391; L9999  
L2175; S9999 S1025 S1014

\*002\* 017; ND03; ND07; N9999 N6893 N6655; N9999 N6882 N6655; B9999 B4535;

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Q8731 Q8719; K9574 K9483; K9687 K9676; B9999 B4488 B4466  
\*003\* 017; B9999 B4671 B4568; B9999 B3496 B3485 B3372; B9999 B4864 B4853  
B4740; B9999 B4875 B4853 B4740